

Resulting Places of the Comet.

Date.	Cape M.T.			R.A.			Log. par. factor.	N.P.D.	Log. par factor.
	h	m	s	h	m	s		° ' "	
July 24	10	8	8.1	16	5	30.56	8.6170	127 14 49.1	8.5798
26	10	38	4.0	16	10	14.75	8.6675	127 15 34.1	8.8389
27	10	54	54.1	16	12	41.63	8.7033	127 15 35.5	8.9868
28	11	6	15.8	16	15	14.61	8.7251	127 15 30.4	9.0719
29	11	10	32.2	16	17	52.45	8.7340	127 15 15.1	9.1072
30	11	5	15.7	16	20	33.87	8.7267	127 14 46.8	9.0792
Aug. 1	10	19	53.3	16	26	5.69	8.6435	127 13 19.6	8.5911
5	9	35	49.5	16	38	8.32	8.5302	127 7 6.2	7.6990
6	9	53	49.7	16	41	24.38	8.5798	127 4 44.4	8.4472
7	10	10	18.4	16	44	43.78	8.6325	127 2 3.0	8.7076
8	10	10	5.0	16	48	4.67	8.6325	126 59 9.8	8.7076
11	10	4	50.4	16	58	29.35	8.6222	126 48 5.2	8.6902
13	10	14	35.2	17	5	45.67	8.6464	126 38 44.6	8.8195
14	9	45	9.5	17	9	23.79	8.5798	126 33 25.7	8.5315
17	9	47	36.8	17	20	47.58	8.5763	126 14 54.6	8.5798
19	10	10	4.8	17	28	40.96	8.6345	126 0 4.9	8.8325
20	10	12	46.7	17	32	39.96	8.6395	125 52 10.9	8.7709
22	10	26	1.8	17	40	44.45	8.6665	125 34 24.9	9.0000
23	10	4	39.6	17	44	44.83	8.6170	125 24 54.1	8.8513
Sept. 15	10	19	31.8	19	20	3.95	8.6138	119 37 5.7	9.2355
17	10	27	13.5	19	28	0.71	8.6263	118 57 17.5	9.2718
21	9	44	44.1	19	43	25.02	8.5132	117 35 48.0	9.2253
22	10	12	12.9	19	47	16.36	8.5866	117 14 19.4	9.2945

The comet was also observed with the transit-circle by Mr. Finlay on August 14 and 16, with the following results :—

Aug. 14	7 34 48.8	17 9 6.19	126 33 57.5	8.6812
16	7 34 26.0	17 16 36.39	126 22 6.6	8.6435

The Orbit of Barnard's Comet, 1884. By J. Morrison, M.D., Ph.D.,
Assistant on the American Ephemeris, Washington, D.C.

From the numerous observations of this comet, already published, I select for the purpose of computing elliptic elements the following observations made at Cambridge, Mass., Nice, and Washington respectively :—

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Washington M.T.	α	δ
July 25 ^h 37 ^m 19 ^s 90	242° 4' 4"5	-37° 15' 32"0
Aug. 24 ^h 12 ^m 44 ^s 42	267 10 42'3	-35 15 30'4
Sept. 23 ^h 33 ^m 99 ^s 19	297 55 9'3	-26 49 50'6

From these positions I obtain by the usual methods the following system of elliptic elements :—

Epoch	1884, Sept. 24 ^h 5 Wash. M.T.
M	7° 13' 19"52
ω	300 57 44'43
Ω	5 11 23'56
i	5 27 18'94
ϕ	35 37 2'50
log q	0.1069968
log a	0.4862043
log μ	2.8207001
P	1958.41 days.

Mean Equinox
of 1884.0.

The residuals for the middle place are zero, and for the following dates the difference between the computed and observed places is as small as can be expected, considering the great difficulty in observing accurately so faint an object :—

Wash. M.T.	$d\lambda \cos \beta.$	$\frac{C-O}{d\beta}.$	log. $\Delta.$
1884, Aug. 12 ^h 36 ^m 16 ^s 52	+ 6"52	- 3"21	9.65375
Sept. 15 ^h 40 ^m 84 ^s 54	+ 9 85	- 8 09	9.74018
Oct. 11 ^h 31 ^m 88 ^s 04	+ 30.91	- 10.62	9.86241
14 ^h 36 ^m 54 ^s 42	+ 21.56	+ 15.71	9.87849

Observations of Comet Barnard, 1884. By John Tebbutt.

The telegram announcing this comet was received from the Melbourne Observatory on July 23, and the comet itself was found on the following evening. Throughout the whole period of observation the comet was excessively faint, and on August 22 was seen with the greatest difficulty. I have made the accompanying observations with the square bar-micrometer on the 4½-in. Equatorial, the whole series being carefully corrected for defective orientation of the micrometer and for proper motion. The refraction corrections, owing to the great altitude at which the comet was observed, are insensible. In those cases where the comparison stars were found in Stone's *Cape Catalogue*, the precessions and secular variations of that catalogue were employed in bringing up the star's mean places to 1884.0. In all other cases the precessions have been calculated for the mean epochs by means of Peter's elements.